



### Caltrans Changes Cold Recycling Terminologies

By David Jones, UC Pavement Research Center (UCPRC) and Allen King, Caltrans

Hot and cold pavement recycling is an evolving field of pavement engineering, and over time, different recycling techniques and technologies have been independently developed, perfected, and implemented. Terminology for the different recycling processes, especially those that do not involve heat (i.e. 'cold' processes), has also evolved over time. It has been mostly based on descriptors of the process or on differentiations based on the equipment used at the time, rather than on the maintenance and rehabilitation scenarios to which the processes are best suited. There has been no "bigger picture" thinking or consideration for a consistent hierarchy of cold recycling terms. This has resulted in inconsistencies in naming conventions and definitions across the spectrum of processes, with overlap in some areas, which in turn can lead to confusion for practitioners and decision makers, especially those new to pavement recycling.

One of the primary areas of confusion stems from the use of the term "cold in-place recycling" (CIR) as both a general term for any type of recycling that does not involve heating the pavement, and as a term specifically for in-place recycling of the top 3 to 6 in. of asphalt concrete in pavements. This confusion is increasing with the development of the next generation of recycling equipment, where one machine can be used to do different types of "cold in-place recycling."

To prevent this continued confusion, to promote consistency, to simplify guidance, specifications, and project documentation, and to avoid misunderstandings about use of these growing technologies, more consistent and descriptive terms and acronyms are needed.

In response to this, the following new pavement recycling terminology protocol is being adopted by Caltrans in guidance, manuals, specifications, test methods, and reports - with the concurrence of the *Caltrans Pavement and Materials Partnering Committee's, Recycling Subtask Group*. This terminology is primarily

focused on the origin and depth of the distresses that are being corrected, and not on the equipment used to do the work. The more recognizable and general term of 'recycling' is used for all types of pavement recycling that reuse all or part of the existing materials in the pavement. The terms 'reclaiming' and 'reclamation' are no longer used in any of the cold recycling terms. Figure 1 shows the hierarchical relationships of the new terminology.

Table 1 provides the general definitions and acronyms associated with the new terminologies:

- Cold recycling: A general term for all types of pavement recycling that do not involve heating the pavement or aggregates.
- Cold in-place recycling (CIR): A general term for all types of in-place recycling that do not involve heating the pavement before and during milling.
- Partial-depth recycling (PDR): A preventive maintenance or rehabilitation process where the focus of the recycling is the asphalt concrete layers, primarily to address top-down distresses (i.e., the recycler milling teeth remain primarily within the asphalt concrete layers). Recycling

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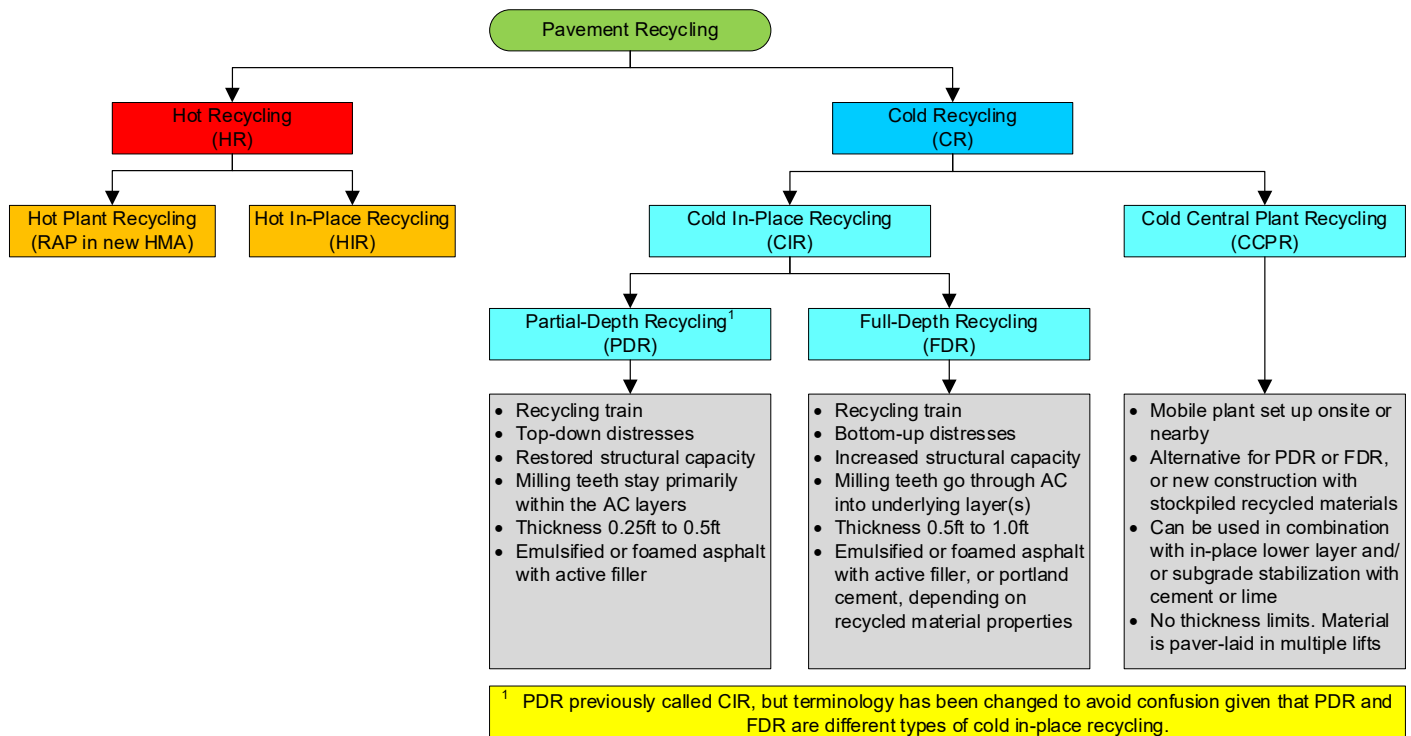
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**Figure 1: Hierarchy of pavement recycling terminology**

depths are typically between 0.25 ft (75 mm) and 0.5 ft (150 mm). Examples of partial-depth recycling trains are shown in **Figure 2**. (Cold in-place recycling [CIR] is a common, but misleading term for this particular recycling strategy.)

- Full-depth recycling (FDR): A rehabilitation process where the entire asphalt concrete layer, as well as the underlying unbound and/or previously stabilized layers are recycled to address bottom-up distresses and structural inadequacy (i.e., the recycler milling teeth go through the asphalt concrete layers into the underlying layers). Recycling depths are typically between 0.5 ft (150 mm) and 1.0 ft (300 mm). Examples of full-depth recycling

- trains are shown in **Figure 3**.
- Cold central plant recycling (CCPR): A preventive maintenance or rehabilitation process where materials are milled to the required depth, transported to a nearby central plant, processed, remixed, transported back to the road, and then laid with a paver. This process can be used for both partial- and full-depth recycling, as well as new construction with recycled materials. Multiple layers can be placed. Stabilization of the underlying layers and/or subgrade can be included as part of the rehabilitation process to increase structural capacity without increasing grade height. An example of a central plant is shown in **Figure 4**.

Recycling Process	Depth	Primary Recycling Agents/Stabilizer
Cold in-place recycling with recycling train	Partial (milling teeth stay primarily within the AC layers)	Emulsified asphalt (PDR-EA), foamed asphalt (PDR-FA)
	Full (milling teeth go through AC into underlying layer[s])	Emulsified asphalt (FDR-EA), foamed asphalt (FDR-FA), portland cement (FDR-C), lime (FDR-L), no stabilizer (FDR-N)
Central plant	Any	Emulsified asphalt (CCPR-EA), Foamed asphalt (CCPR-FA), portland cement (CCPR-C), lime (CCPR-L) Lime

**Table 1 Acronyms for Pavement Recycling**

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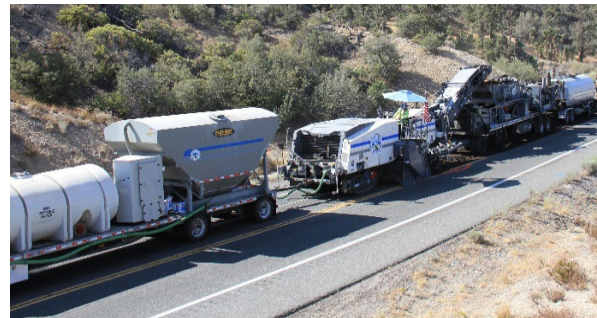


Figure 2: Partial-depth recycling trains (single- and multi-unit)

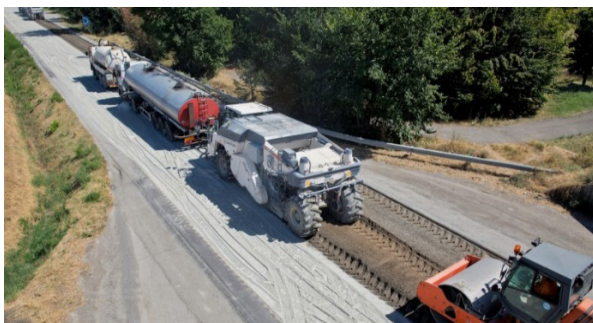


Figure 3: Full-depth recycling trains (wheeled and tracked)(single- and multi-unit)



Figure 4: Cold central plant recycling

Yes, terminology changes can be confusing for current users at the time of change, and there will always be resistance to change for the sake of resistance to change, but if the changes make sense, they are usually accepted quickly.

For more information go to: <https://escholarship.org/uc/item/54z679x4>

or contact David Jones at: [djjones@ucdavis.edu](mailto:djjones@ucdavis.edu)



## New HMA-LG Specification for Local Agency Use

By Roger Smith, CP<sup>2</sup> Center



Mix design laboratory

As mentioned in our previous Newsletter, there is now a model specification for use by cities and counties for hot-mix asphalt (HMA) produced using the Superpave mix design method. The model specification, referred to as Hot-Mix Asphalt - Local Governments

(HMA-LG), is housed on the website of the City and County Pavement Improvement Center (CCPIC) in Word format at: [www.ucprc.ucdavis.edu/ccpic](http://www.ucprc.ucdavis.edu/ccpic). Here's some additional information about the new specification.

The HMA-LG specification is based on the current Caltrans Section 39, but has been extensively restructured, revised and simplified for local agency use. Similar to Section 39, HMA-LG is based on Superpave mix design methods and is written towards contractor quality control and agency quality assurance and acceptance testing. Required tests and test frequencies have been revised to better reflect local agency capabilities and economies, while still ensuring a quality mixture will be produced.

HMA-LG accommodates lower traffic levels by specifying three design Levels for different

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Traffic Index (TI) levels: Level 1 (TI 5.0 to 7.5, 50), Level 2 (TI 8.0 to 10.0, 65), and Level 3 (TI 10.5 to 13.5, 85). For mix design, the number of gyrations in the laboratory compactor and the percent air voids specified for each Level are intended to ensure the binder content is sufficient to prevent a mix with insufficient binder from being produced.

Each design Level also has corresponding aggregate quality requirements, which are intended to reflect both the aggregate availability across the state as well as the appropriate aggregate quality requirements for each design level. HMA-LG includes 3/8", 1/2", and 3/4" gradations. The combined aggregate gradations specified are those in the Asphalt Institute "MS-2" publication.

HMA-LG is compatible with both neat and modified (except asphalt rubber) asphalt binders. The specifier will need to specify the 'PG' grade of asphalt binder required. Binder replacement from the inclusion of reclaimed asphalt pavement (RAP) is limited to 25 percent. Lime treatment and liquid antistrip requirements are based on the job mix formula (JMF) and aggregate quality.

In-place density requirements are based on maximum theoretical density (MTD), with California Test 375 modified to use AASHTO T209, similar to Section 39. The HMA-LG specification also includes a table of reduced payment factors for failure to achieve a field density in the range of 92 -97% of MTD.

The HMA-LG specification is a model, intended to be edited by the user agency. Since it is based on Caltrans Section 39, it is most readily adapted by agencies currently using the 2018 Caltrans Standard Specifications, but may be used with earlier editions, or with other standard specifications such as the Greenbook.

The CCPIC is currently soliciting interest from local agencies in constructing pilot projects using the HMA-LG model specification. The CCPIC may be able to offer assistance with mix designs and other technical support. Interested agencies should contact John Harvey ([jtharvey@ucdavis.edu](mailto:jtharvey@ucdavis.edu)), Erik Updyke ([erikup59@gmail.com](mailto:erikup59@gmail.com)), Shadi Saadeh ([shadi.saadeh@csulb.edu](mailto:shadi.saadeh@csulb.edu)), Ashraf Rahim ([arahim@calpoly.edu](mailto:arahim@calpoly.edu)), or Dingxin Cheng ([dxcheng@csuchico.edu](mailto:dxcheng@csuchico.edu)) for further information and support.

The HMA-LG specification can be found at: [www.ucprc.ucdavis.edu/ccpic](http://www.ucprc.ucdavis.edu/ccpic)



## City of Highland Uses CCPR

By James Emerson (PRS)

The City of Highland in San Bernardino County, with its long history of utilizing Sustainable Pavement Engineering strategies, recently completed a local streets Sector E project in a residential neighborhood that incorporated Cold Central Plant Recycling (CCPR) of the existing asphalt into the pavement design. Over the past 8 years, the City has successfully utilized Cold In-Place Recycling (CIR), Cold Central Plant Recycling (CCPR) and Full-Depth Reclamation (FDR) with cement, on many arterials, collector and residential streets, totaling about 4 million square feet to date.

On February 17th, the City sponsored a live, in-person project site visit and tour to demonstrate the CCPR operation. Pavement Recycling Systems (PRS), along with Western Emulsions and Aragon Geotechnical, hosted over 50 attendees that included local agencies, such as San Bernardino County, Riverside County, City of Calimesa, and City of Highland. Also attending were engineering firms like Kleinfelder, Willdan Engineering, G3 Quality, Leighton Associates, and Engineering Resources of Southern Californ-

ia Engineering (ERSC), who was also the civil engineering design firm for this project.

Jon Dooley, PRS General Superintendent, took the lead as the safety coordinator, meeting host, and tour guide. PRS's Marco Estrada and James Emerson, as well as project partners Matt Conarroe (Western Emulsions), and Fernando Aragon (Aragon Geotechnical, Inc.) were on hand to provide technical information on the project development, project execution, equipment and blending process, as well as quality control, quality assurance and field-testing requirements.

Led by Foreman Josh Adams, the CCPR operations were operating safely and productively. Due to some unforeseen subgrade issues, one of PRS's ReStructuring crews, led by Robert Fogliasso, was also on-site performing a safe and effective subgrade cement stabilization operation. Based on the feedback from the attendees, the field demonstration was a resounding success!

Representing the City of

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Highland was Carlos Zamano, P.E., who has extensive history with Sustainable Pavement Engineering. According to Zamano, "We received many compliments from Highland residents on this cost-effective treatment method used to fix residential streets. I would recommend it to any agency that is planning to do pavement rehabilitation on local roads."

Pavement recycling processes can be effective for reducing the costs and environmental impacts of pavement rehabilitation and reconstruction. Pavement recycling processes such as cold CIR, CCPR and FDR have the advantage that most of the mixture can be produced from in-situ pavement materials or existing stockpiles of reclaimed asphalt pavement (RAP). In addition, approximately 90-100% of the mass of the mixture is not heated during these processes, greatly reducing fuel consumption and greenhouse-gas emissions, as compared to traditional hot or warm asphalt mixtures.

On this project, the existing asphalt pavement section was milled, loaded into trucks, and taken to a local stockpile-plant site location. This location was within ¼ of a mile of the construction area, keeping trucking costs to a minimum.

During milling operations, some localized areas of unstable subgrade were encountered and needed stabilization. The City, with its past knowledge of cement stabilization, decided to add this value-engineered process to approximately 100,000 square feet. This provided a stable platform for all paving and construction equipment, while lowering costs to the City when compared to a remove-install geogrid-and replace with new base method. The stockpiled RAP was processed per mix design, adding engineering emulsion from Western Emulsions at 3.5% by dry weight of RAP, Portland cement at 0.05 % by dry weight of RAP, and blending to produce a homogenous 100% recycled asphalt mix. The material was installed by All American Asphalt, the general contractor on this project, to a compacted thickness of 3-inches, to serve as the base course. A final hot mix asphalt (HMA) surface course of 1.5 inches was placed as the wearing course.

For more information on this project contact James Emerson at: [JEmerson@pavementrecycling.com](mailto:JEmerson@pavementrecycling.com), or

Carlos Zamano at: [czamano@cityofhighland.org](mailto:czamano@cityofhighland.org)



CCPR mixing plant



CCPR mix in place



## Hot Mastic Sealer Used By Santa Barbara County

By Ade Craig, Crafcro, Inc. and Andy O'Brien, County of Santa Barbara

The Clark Avenue interchange is a highly traveled, four-lane road serving as a primary access point to California State Route 135 in Santa Barbara County. It is also an arterial roadway for the Town of Orcutt. One critical problem that the County needed to address was deterioration to the longitudinal paving joint at and around the Clark Avenue Interchange (Figure 1). This type of deterioration can often lead to premature pavement failure if left untreated.

"Considering standard crack sealing to address this type of problem was not an option. The

deterioration that was occurring to the joint progressed beyond the point of performing a typical crack sealing treatment," said County of Santa Barbara Public Works Superintendent, Andy O'Brien. "An application using cold mix or HMA was also not a viable option due to high traffic volumes. Extensive road closures would have caused a severe disruption to traffic flow."

Finding the right solution would be a challenge. The repair material needed to treat and preserve the pavement, but also not create significant disruptions to traffic flows or safety hazards

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when applied. According to Andy O'Brien, "We were looking for a repair material that could be quickly and easily installed, flexible, durable, and capable of receiving road paint markings that would hold up well in high traffic." Through a product demonstration, 'Mastic One' by Crafcro met all the requirements because of its ease-of-installation, proven service life of more than five years, and the ability to receive traffic when cooled.

Applied in September of 2017, almost 5 years has transpired since the County installed 4200 lbs. of the hot Mastic One® material to treat the longitudinal joint cracking at and around the Clark Avenue Interchange (Figure 2). The work started at Foxenwood Lane on the west side of the SR 135, applying 200 yards of the hot Mastic One® at a time with a drag box. This time and labor-saving installation method continued under SR 135, ending at the northbound

on/off ramps.

The County Public Works Department maintenance crew recognized that utilizing Mastic One® to treat longitudinal joint raveling resulted in significantly less traffic interruption, less equipment and crew, less cost and time spent, and an improved long-term repair. These benefits along with ensuring a smooth ride for vehicles provided an unrivaled solution to one of the most prevalent forms of distress in asphalt roads.

"The performance has been excellent," said County of Santa Barbara Public Works Superintendent, Andy O'Brien. Mastic One® has performed how we expected. The unraveling of the joints/seams has stopped. Another concern was how the mastic material would accept traffic line paint. To our delight, the paint has adhered to the mastic material exceptionally well." (Figure 3)



Figure 1: Untreated longitudinal joints at Clark Ave



Figure 2: Crew treats longitudinal joint distresses with hot mastic



Figure 3: Clark Ave longitudinal joints treated with hot mastic





The performance of Mastic One® on this project has led the County of Santa Barbara to use the repair mastic on other projects. Mastic One® enabled the county to complete the repair in a

safe, effective, and efficient manner.

For more information contact: Andy O'Brien at: [aobrien@countyofsb.org](mailto:aobrien@countyofsb.org) or Chris Vacca at: [Chris.Vacca@crafco.com](mailto:Chris.Vacca@crafco.com)



## Concrete Pavement Surface Texturing

By IGGA



Many of the nation's existing concrete roads were put in place as early as the 1960s and still have lots of life left in them. Continuing to use these roads by retexturing the concrete surface is a sustainable choice compared to covering them with new materials. With enactment of the Infrastructure Investment and Jobs Act (IIJA), the road building industry must determine how to use new sources of funding wisely. Communications from the Federal Highway Administration (FHWA) indicate that the administration will work with recipients of Federal funds "to encourage and prioritize the repair, rehabilitation, reconstruction, replacement, and maintenance of existing transportation infrastructure."

A [concrete pavement surface texturing case study](#) published by the FHWA outlined two proven ways to improve surface characteristics of older concrete pavements: conventional diamond grinding (CDG) and next-generation concrete surface (NGCS). The FHWA summarized research done by Caltrans, who constructed a pilot project on I-5 near Solana Beach in San Diego County, with various ground surfaces. Caltrans undertook the study to reduce noise emissions on their existing concrete pavements. The department has used CDG for decades as a means of restoring ride quality and frictional characteristics, noting that diamond grinding is comparatively inexpensive and avoids

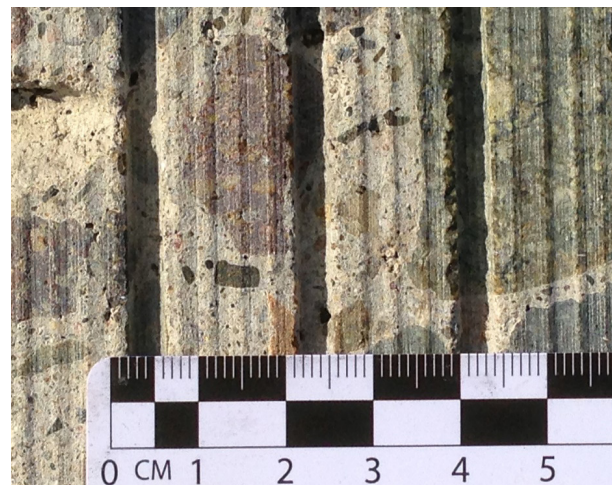
the use of new materials, making it a desirable alternative to overlays and high friction surface treatments. Caltrans included NGCS in their pilot study because of its ability to reduce noise emissions to an even greater extent than CDG. In 2010, Caltrans applied CDG on a 10-mile stretch of I-5 just north of San Diego. This was followed by installing NGCS in 2012 on one-mile test segments of various concrete pavements originally constructed in the 1960s, 1970s, and 2000s. The department measured smoothness, noise generated at the tire-pavement interface and surface friction, both before and after the installation of CDG and NGCS.

Researchers identified improved smoothness, reduced noise emissions, increased surface friction and increased texture as key benefits of CDG and NGCS:

- Results showed a 60 percent reduction in International Roughness Index (IRI) through CDG, and a 76 percent reduction in IRI through NGCS. This reduces damage to vehicles and goods, improves fuel efficiency and reduces emissions.
- CDG and NGCS resulted in project average noise levels of 103.2 and 100.7 dBA, respectively. The sound intensity threshold for quieter concrete pavements is 101-102 dBA. Compared to pre-grind measurements, CDG reduced noise levels by 2 dBA



NGCS Treatment of PCC



NGCS Close-up

Continued, next page

and NGCS reduced noise levels by 4.4 dBA.

- Surface friction and textures created by CDG and NGCS exceed the minimum agency requirements for high-speed facilities, improving driver safety.

Caltrans' study demonstrated that both CDG and NGCS provide substantial improvements to

existing concrete pavement, while being comparatively low-cost and eco-friendly.

For more information, go to the International Grinding & Grooving (IGGA) website at [www.igga.net](http://www.igga.net), or see "[Concrete Pavement Surface Texturing](#)," by the FHWA Sustainable Pavements Program.



## WRAPP Update



The 2023 Annual Workshop of the Western Region Association For Pavement Preservation (WRAPP) will take place at the Hilton Hotel in Long Beach, CA, February 1-2. More than 100 attended the live event in 2021 with another 40-plus tuning in virtually. Attendees always represent many local agencies, Caltrans and various aspects of the asphalt pavement industry. The WRAPP group is working to assemble an informative, value-packed agenda featuring informative speakers from industry and public agencies. The meeting room will also feature informational exhibitors representing various aspects of the pavement preservation world, from patching materials to equipment and engineering services. The theme for the 2023 Workshop is "Don't Distress – Pavement Preservation Solutions". So mark your calendars and save

By Matthew Conarroe, WRAPP President

the dates of Jan 31st to Feb 2nd, 2023. The WRAPP Golf Tournament to be held on Jan 31st.

Matthew Conarroe (Western Emulsions) WRAPP President, says, "Please plan to join us for a very informative Workshop with presentations from industry experts and examples of agency pavement management strategies."

Further details of 2023 Workshop and registration will soon be posted to the WRAPP website at: [www.wrapp.org](http://www.wrapp.org)



## MTC Update

The Metropolitan Transportation Commission (MTC) 'StreetSaver' Toolbox is getting a big



upgrade! This newest upgrade is designed to improve efficiency and speed to get the most out of the StreetSaver GIS Toolbox.

StreetSaver users will experience a significant performance boost to map rendering and func

By Jose Reyes, Street Saver Support

tionality on GIS screens. There are also many enhancements to GIS screens like a new look, section information pop-up screens, and feature info displaying on the map as labels. This new upgrade has shown speed improvements of up to 90%. Additionally, GIS data will now be stored as SQL geometry data, which is faster and compatible with other popular 3rd party GIS software such as ArcGIS.



This latest enhancement is part of the ongoing commitment to creating the best possible experience for StreetSaver users. This is a free upgrade for all StreetSaver users with a GIS integration.

For more information go to [www.streetsaver.com](http://www.streetsaver.com), or contact Jose Reyes at: [jreyes@devmec-ca.com](mailto:jreyes@devmec-ca.com)





## 2022 Pavement Preservation Academy Delivered

By R. Gary Hicks and Ding Cheng, CP<sup>2</sup> Center

As part of the Senate Bill 1 (SB-1) funding through the CSU Transportation Consortium headed up by Mineta Transportation Institute (MTI) in San Jose State University, the California Pavement Preservation Center (CP<sup>2</sup>C) delivered training for its Certificate Program in pavement preservation, via **"The Pavement Preservation Academy"**. Over 100 individuals participated in the Academy held in March 2022. The purpose of the Certificate Program is to help state and local agencies improve the design and construction of pavement preservation treatments. The effort began in 2018 with the development of **technical manuals** for chip seals, slurry surfacing, Cape seals, and thin hot mix overlays. These four manuals can be found with the following links:

<https://transweb.sjsu.edu/research/1845A-Chip-Seal-Manual>

<https://transweb.sjsu.edu/research/1845B-Slurry-Surfacing-Manual>

<https://transweb.sjsu.edu/research/1845C-Cape-Seal-Manual>

<https://transweb.sjsu.edu/research/1906-Manual-Thin-Asphalt-Overlay>

The fifth manual, on Pavement Repairs & Preparation For Resurfacing will be released soon. It is currently being finalized by MTI.

The first Academy was offered on March of 2021. The second Academy for the Certificate

Program, covering the five topic areas, was held online March 21-25 and consist of five 3-hour modules. The student must pass an exam to gain a Certificate. Initially the Academy will be offered once per year, but it may be held more often based on demand. If interested, in participating, please contact Dr. Ding Cheng, the CP<sup>2</sup> Center Director at [dxcheng@csuchico.edu](mailto:dxcheng@csuchico.edu).

The Academy is designed to empower state and local agency staff, and contractors, through training, to choose and properly construct the right treatment, at the right time, to optimize preventative maintenance funds. Most local agencies defer road maintenance over many years, and there are thousands of miles of public roads that are currently in poor condition. With new state funding (e.g. SB1) available for maintenance and construction projects, proper preventative maintenance is an issue of paramount importance. Treatments that can preserve pavements and defer the need for costly road reconstruction are very important.

The instructors for the various modules are e recognized names in the field, including Gary Hicks, Leros Lane, Ding Cheng, Roger Smith and Erik Updyke.

Registration information can be found on the Center website at: <https://www.csuchico.edu/cp2c/educational-opportunities/pp-academy.shtml>.



CP<sup>2</sup> Center  
News

## Coming Events - Mark Your Calendar!

By Roger Smith, CP<sup>2</sup> Center

**MSA Conference: September 11-15 (San Diego)**

The San Diego Chapter of the Maintenance Superintendents Association (MSA) has announced that its annual *Training Conference and Equipment Show* will be held at the Town and Country Resort in San Diego. For more information got to:



San Diego Area Chapter

[www.mainsupt.com/conference](http://www.mainsupt.com/conference)

**FHWA / PPRA Webinars: Various Dates (Online)**

FHWA will continue to team up with the Pavement Preservation and Recycling Association (PPRA) to offer short webinars on

various popular pavement maintenance treatments, including crack sealing, slurry surfacing, chip seals, Cape seals, and proper handling of asphalt emulsion products. Registration is at:

<https://connectdotcqp1b1.connectsolutions.com/content/connect/c1/7/en/events/catalog.html?folder-id=1296478025&from-origin=connectdot.connectsolutions.com>



U.S. Department  
of Transportation  
Federal Highway  
Administration



COMING  
EVENTS

Find more information and dates contact: [Jason.Dietz@dot.gov](mailto:Jason.Dietz@dot.gov)

**Nevada LTAP Center Classes: Various Dates (Online)**

The Nevada center for the Local Technical Assistance Program (NV-LTAP) regularly offers classes on a variety of pavement maintenance



topics.

For more information go to: <https://nvltap.com/>  
**RMWPPP Meeting: Sept. 27-29 (Albuquerque)**

The Rocky Mountain West Pavement Preservation Partnership (RMWPPP) is a regional forum of pavement professionals from State and Provincial Agencies, Contractors, Suppliers, Academia, Local and Federal Government Officials.

For more information got to:



<https://tsp2pavement.pavementpreservation.org/rocky-mountain-west-rmwppp/>

**The Asphalt Institute and NAPA Webinars: (Online)**

The Asphalt Institute offers national training on

pavement design, asphalt binders, mix design and asphalt construction. For more information go to: <http://www.asphaltinstitute.org/training/seminars/>

The National Asphalt Pavement Association (NAPA) offers webinars on various asphalt pavement topics. For current listings go to: <https://www.asphaltpavement.org/programs/napa-webinars>



**The National Center for Pavement Preservation (NCPP) Training: (Online)**

NCPP was established by Michigan State University and FP2, Inc. to lead collaborative efforts among government, industry, and academia in the advancement of pavement preservation by advancing and improving pavement preservation practices through education, research and outreach. Training is an integral part of any Pavement Preservation Program. Preservation practices are constantly evolving



as new techniques and products are developed. Courses are offered periodically throughout the year and are advertised on this website. [www.pavementpreservation.org](http://www.pavementpreservation.org)



**Disclaimer: Caltrans does not endorse any industry products or services, and the contents of newsletter articles reflect the views of the authors and do not necessarily reflect the official views or policies of Caltrans, the CP2 Center, or the State of California.**

Caltrans established the California Pavement Preservation (CP<sup>2</sup> Center) at CSU, Chico in July 2006, and fully funded the Center in January 2007. Dr. DingXin Cheng is the current Director of the Center. Mr. Rukesh Maharjan is the current Contract Manager of Caltrans.

The purpose of the Center is to provide pavement preservation support services to Caltrans and other public agencies, and to industry. Unique services include developing educational programs in pavement preservation, providing training and staff development opportunities, providing needed technical assistance to public agencies and industry, and managing/conducting research and outreach services, such as this newsletter.

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